NOTES ON *CAREX* (CYPERACEAE), WITH *C. GODFREYI* NEW TO ALABAMA AND *C. COMMUNIS* AND *C. SCOPARIA* NEW TO MISSISSIPPI

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ABSTRACT

Field explorations have yielded *Carex godfreyi* new to Alabama and *C. communis* and *C. scoparia* new to Mississippi, U.S.A. Additional range extensions are presented for *C. bicknellii* var. *opaca* and *C. oklahomensis* in Mississippi. Locality and habitat data are presented for all species reported.

RESUMEN

Las exploraciones de campo han dado como resultado *Carex godfreyi* nuevo para Alabama, y *C. communis* y *C. scoparia* nuevos para Mississippi, U.S.A. Se presentan extensiones de areal para *C. bicknellii* var. *opaca* y *C. oklahomenis* en Mississippi. Se indican la localidad y el hábitat de todas las especies citadas.

INTRODUCTION

In preparing a synoptic treatment of *Carex* as a contribution to the Flora of Mississippi Project, the senior author has continued to examine herbarium specimens and conduct field surveys for species with potential to occur within Mississippi and other southeastern states in the U.S.A. The authors have also continued assessment of population size, distribution, and habitat requirements of recently reported species *C. bicknellii* Britton var. *opaca* F.J. Herm. and *C. oklahomensis* Mack., especially because these may have potential to become weedy. This mauscript adds to the knowledge of *Carex* that has been reported in recent years (Bryson 1984a; Bryson & Jones 1990; Bryson et al. 1991; Bryson et al.

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1992; Bryson & Carter 1994; Carter et al. 1990; Morris & Bryson 1986; Naczi & Bryson 1990). As previously discussed, the flora of Mississippi is still poorly known in comparison with several adjacent states (Bryson & Carter 1994). Lowe's *Plants of Mississippi* (1921), although outdated, must continue to serve as a baseline for the general floristic work in the state.

The terminology of physiographic regions or resource areas in Mississippi follows Lowe (1921) as adapted by Morris (1989). Herbarium abbreviations follow Holmgren et al. (1990), except ctb, MMNS, and USMH (pers. herb. of Charles T. Bryson; Mississippi Museum of Natural Science, Jackson; and University of Southern Mississippi, Hattiesburg, respectively).

NEW STATE RECORDS

Carex communis Bailey var. **communis** belongs to the section *Acrocystis* (Rettig 1988) and is known from dry to mesic rich woods in mountains, steep ravines, rocky ledges, and calcareous soils from Quebec to Ontario and Minnesota, south to Georgia, Tennessee, Alabama, and Arkansas (Mackenzie 1931; Naczi 1993; Radford et al. 1964; Rettig 1988; Steyermark 1963). The following are the first collections of *C. communis* from Mississippi.

Voucher specimens: U.S.A. MISSISSIPPI. **Monroe Co.:** ca. 1 mi N Lake Monroe, T13S R7E S10 SW/4, 12 May 1992, *MacDonald 4561* (ctb, IBE, MICH, others to be distributed); 28 Apr 1993, *MacDonald 5928 & Warren* (ctb, IBE, MICH, SWSL, others to be distributed); 19 May 1994, *Bryson 13651 & MacDonald* (ctb, SWSL, others to be distributed).

At this site in the Tennessee Hills Region, *C. communis* var. *communis* was found at an elevation of about 75 to 90 m in a mesic beech-maple-oak forest near the crest of a N- to NE-facing slope on Ruston and Cuthbert soils. It was associated with *Acer barbatum* Michx., *Actaea pachypoda* Elliott, *Adiantum pedatum* L., *Asimina triloba* (L.) Dunal, *Arabis canadensis* L., *Carex abscondita* Mack., *C. cephalophora* Willd., *C. corrugata* Fernald, *C. blanda* Dewey, *C. gracilescens* Steudel, *C. rosea* Willd., *C. laxiflora* Lamarck var. *serrulata* F.J. Herm., *C. willdenowii* Willd., *Cynoglossum virginianum* L., *Decumaria barbara* L., *Fagus grandifolia* Ehrhart, *Geranium maculatum* L., *Hepatica americana* (DC.) Ker, *Lindera benzoin* (L.) Blume, *Morus rubra* L., *Obolaria virginica* L., *Osmorhiza longistylis* (Torrey) DC., *Panax quinquefolium* L., *Quercus alba* L., *Rhamnus caroliniana* Walter, *Thelypteris hexagonoptera* (Michx.) Weath.

Carex godfreyi Naczi occurs in wet hammocks, swamps, and floodplains in the coastal plain from southern North Carolina southward to the central peninsula of Florida and west and to southwestern Georgia and nearby portions of the Florida panhandle. It inhabits shaded, mesic to wet areas in calcareous muck or sandy loam soils (Naczi 1993). *Carex godfreyi* belongs to a complex of species that include *C. amphibola* Steudel, *C. corrugata* Fernald, and *C. grisea* Wahlenb.

Carex godfreyi is distinguished from the preceding species by its more loosely cespitose habit, its leaf sheaths and cataphylls with more extensive purple-red pigmentation, and its narrower leaf bases. The following citations are the first report of *C. godfreyi* from Alabama.

Voucher specimens: U.S.A. ALABAMA. **Houston Co.:** ca. 9 mi S of Dothan, vicinity of Big Creek; on road to Madrid at 0.2 mi SE of Hwy US 231, 18 May 1992, *MacDonald 4594a* (ctb, IBE, KNK, others to be distributed); Chattahoochee State Park, area where Irwin Mill Creek meets Hwy AL 95, 5 May 1993, *MacDonald 5975* (ctb, IBE, KNK, SWLS, others to be distributed).

At the site about nine miles south of Dothan, *C. godfreyi* grew in a *Fagus grandifolia-Magnolia grandiflora* L.-*Magnolia virginiana* L.-*Pinus glabra* Walter-*Quercus laurifolia* Michx.-*Quercus michauxii* Nutt. forest above Big Creek. Additional associates included *Carex abscondita*, *C. complanata* Torr. & Hook., *C. debilis* Michx., *C. leptalea* Wahlenb., *C. styloflexa* Buckley, *Gordonia lasianthus* (L.) Elliott, *Uvularia floridana* Chapm. At the Chattahoochee State Park site, *C. godfreyi* grew in an *Acer barbatum-Magnolia grandiflora-Magnolia virginiana-Persea palustris* (Raf.) Sarg.-*Quercus hemisphaerica* Bartram forest above Irwin Mill Creek on a clay soil. Associates present at this site also included *Aristolochia serpentaria* L., *Bumelia lanuginosa* (Michx.) Persoon, *Conopholis americana* (L.) Wahl., *Cornus stricta* L., *Dryopteris ludoviciana* (Kunze) Small, *Ilex cassine* L., *I. montana* Torr. & Gray, *Lyonia lucida* (Lamarck) K. Koch, *Osmanthus americana* (L.) Benth. & Hook., *Pedicularis canadensis* L., *Ponthieva racemosa* (Walter) C. Mohr, *Rhododendron canescens* (Michx.) Sweet, *Sanicula canadensis* L., *S. marilandica* L., *Thelypteris palustris* Schott, and *Viburnum obovatum* Walter. *Carex atlantica* Bailey subsp. *capillacea* (Bailey) Reznicek, *C. leptalea*, *Cicuta mexicana* Coult. & Rose, *Decodon verticillatus* (L.) Elliott, *Nasturtium microphyllum* (Boenn.) Rchb., *Rosa palustris* Marshall, and *Zizaniopsis miliacea* (Michx.) Doell & Asch. grew in wetter areas nearby. Both collections are from the Doughtery Plain District of the East Gulf Coastal Plain of Alabama (Sapp & Emplaincourt 1975).

Carex scoparia Willd. var. **scoparia** is known from open areas in swampy or wet river bottoms, valleys, prairie swales, upland prairies, margins of sink-hole ponds, and roadside ditches from Newfoundland to British Columbia, south to South Carolina, Tennessee, Arkansas, Oklahoma, New Mexico, and Oregon (Kolstad 1986; Mackenzie 1931; Radford et al. 1964; Steyermark 1963). This collection is first of *C. scoparia* from Mississippi.

Voucher specimens: U.S.A. MISSISSIPPI. **Lafayette Co.:** Presbyterian Camp Hopewell, ca. 6 mi NE Oxford, T8S R2W S9, 28 May 1994, *Bryson 13910* (ctb, IBE, MICH, SWSL, others to be distributed).

At this site in the Central Hills Region, *C. scoparia* var. *scoparia* grew in an open area on coarse sandy soil above a small spring-fed lake in association with

Carex albolutescens Schwein., *C. festucacea* Willd., *C. laevivaginata* (Kük.) Mack., *C. longii* Mack., *C. lurida* Wahlenb., *C. triangularis* Boeck., *C. vulpinoidea* Michx., *Fuirena squarrosa* Michx., *Rhynchospora glomerata* (L.) Vahl, *Xyris torta* J.E. Smith.

OTHER NOTEWORTHY COLLECTIONS

Carex bicknellii Britton var. **opaca** F.J. Herm. was described from three collections of Delzie Demaree from river terraces in Lonoke and Prairie counties, Arkansas (Hermann 1972). *Carex bicknellii* var. *opaca* was first found in Mississippi at a site in the Black Prairie Region of Mississippi where *C. oklahomensis* Mack. was first collected in the state (Bryson & Carter 1994). The following citation is the second report for Mississippi.

Voucher specimens: U.S.A. MISSISSIPPI. Itawamba Co.: N of Dorsey, SW of junction of Hwy US 78 and Dorsey-Fawn Grove Road Exit, T9S R7E S25, 25 May 1994, *Bryson 13802* (ctb, MICH).

Three plants of *C. bicknellii* var. *opaca* were observed at this site in close association with *C. oklahomensis* Mack. Each plant was depauperate compared to those from a Lee County site observed in 1993 (Bryson & Carter 1994), but plant size was also reduced at the Lee County site in 1994, possibly due to dry conditions. In Itawamba County, *C. bicknellii* var. *opaca* was also associated with *C. bushii* Mack., *C. cherokeensis* Schweinitz, *C. complanata* Torr. & Hook., *C. glaucodea* Tuck., *C. longii* Mack., *C. vulpinoidea* Michx., *Cyperus echinatus* (L.) Woods, *C. lancastriensis* Porter in Gray, *C. odoratus* L., *C. strigosus* L., *Festuca pratensis* Huds., *Eleocharis obtusa* (Willd.) Schult., *Fimbristylis autumnalis* (L.) Roem. & Schult., and *Rhynchospora capitellata* (Michx.) Vahl.

Carex oklahomensis Mack. is known in Mississippi only from Lee County, just east of Tupelo (Bryson et al. 1992). The following data are for an additional site in Lee County and for the first stations in Itawamba and Lowndes counties.

Voucher specimens: U.S.A. MISSISSIPPI. **Itawamba Co.:** N of Dorsey, SW of jct. of Hwy US 78 and Dorsey-Fawn Grove Road Exit, T9S R7E S25, 24 May 1994, *Bryson 13803* (ctb, MICH). **Lee Co.:** Tupelo, SW of jct. Hwy US 78 and Veterans Blvd. (=old Saltillo Road), T9S R6E S21, 24 May 1994, Bryson 13806 (ctb, MICH). **Lowndes Co.:** ca. 5 mi N of Columbus, Columbus Air Force Base, T16S R18W S30 SE/4 of E/2, 7 Jun 1993, *Warren 2469* (ctb, IBE, MICH, MISS, MMNS, SWSL, USMH, VDB, VSC, additional specimens to be distributed); 19 May 1994, *Warren 2595, MacDonald & Bryson* (IBE, MICH, additional specimens to be distributed); *MacDonald 7197, Warren & Bryson* (ctb, IBE, MICH, additional specimens to be distributed); *Bryson 13680, Warren & MacDonald* (BRIT/SMU, ctb, DSC, IBE, MICH, MISS, MMNS, USMH, VDB, VSC, additional specimens to be distributed).

The additional collection from Lee County and the one from Itawamba County are both along highway US 78. As previously speculated (Bryson et al. 1992), it is likely *C. oklahomensis* was introduced with blown hay for erosion control

along the construction corridor of Highway US 78 in Itawamba and Lee counties. Associates at both sites are the same as those previously discussed for *C. bicknellii* var. *opaca*. It is likely that *C. oklahomensis* was introduced at the Lowndes County site in much the same manner as the Itawamba and Lee county sites or as a contaminate of grass seeds planted for erosion control. At the Lowndes County site, *C. oklahomensis* grew west of Independence Boulevard along and south of a small drainage ditch through a pine-hardwood forest. In 1993, *C. oklahomensis* plants were 1.4 to 1.7 m tall. At the time the specimens were collected in June, plants were drooping from the weight of the infructescences. Plants were only 1.0 to 1.2 m tall in 1994; the reduced plant height may have been caused by increased competition from grasses and drier than normal conditions. Associates at the Lowndes County site are *Carex frankii* Kunth, *C. longii* Mack., *C. triangularis* Boeck., *Eleocharis obtusa* (Willd.) Schult., *Festuca pratensis*, and *Glyceria septentrionalis* Hitch. In Mississippi, *C. oklahomensis* inhabits open sites with mucky clay soil, which are transitional between the Black Prairie and Tennessee Hills regions.

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